



FW MURPHY®
PRODUCTION CONTROLS



Official FW Murphy Distributor
PT. ATAMORA TEHNIK MAKMUR

45APE Series Pressure Gauges



The 45APE Series gauge instrument is a mechanical gauge for pressure indication. It includes two adjustable SPDT switches.

- Combination indicating gauge with independent low and high snap-acting switches
- Field-adjustable and highly visible low and high pressure trip point indicators
- Dual-sector geared movement allows for full-scale indication and set point control
- Panel- and surface-mount versions available
- Latching control relay versions available

Overview

The 45APE Series features two adjustable SPDT switches. These snap-acting switches can be used for start and stop, to trip alarms and to shut down equipment. Ranges are available from 30 psi (207 kPa) [2.06 bar] thru 5,000 psi (34.48 MPa) [344.73 bar].

The 45APE Series utilizes a bourdon tube sensing unit with a stainless steel dual-sector geared movement. Each of the sectors drives separate pointers when pressure is applied to the bourdon tube. The indicating pointer (visible pointer) shows actual pressure reading, including below and beyond the low and high trip points. The low and high trip points are adjustable independently on the gauge front lens. The switch operator pointer (behind the dial) is calibrated to follow the indicating pointer. The low and high trip point indicators arrest the switch operator pointer. As pressure decreases or increases through the principle of lost motion, the respective snap-switch is tripped.

The 45APE Series models are widely used in applications requiring pressure indication and Form C low and high pressure switches

Basic Models

45APE Series gauge instrument

Surface mount (square case) version

45APEF Series gauge instrument

Panel Mount (round Case) Version

Specifications

- Dial: White on black, dual scale, psi and kPa standard, 4-1/2 in. (114 mm) diameter
- Case: Die cast aluminum, surface or panel mount
- Overrange: Do not exceed 10% FS above full range
- Process Connection: 1/4 NPTM thru 1000 psi; 1/2 NPTM 1,500 – 5,000 psi
- Sensing Element: Bronze or 316 stainless steel bourdon tube
- Gage Accuracy: Indicating pointer within switch points with hysteresis of <1%; ±2% for first and last quarters of scale; middle half of scale is ±1%. Indicating pointer above or below trip point:

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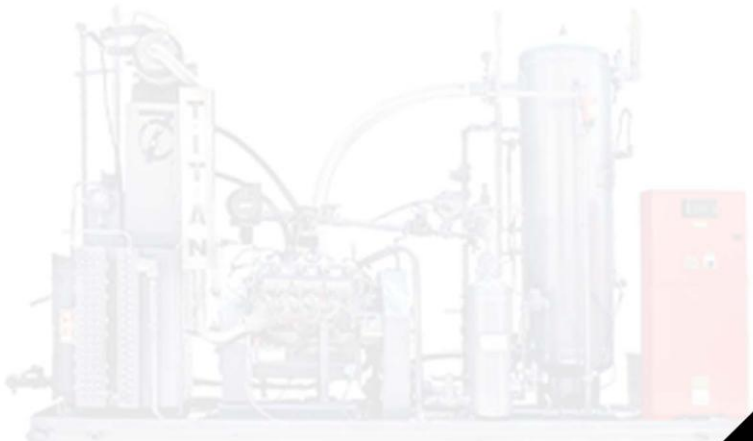
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45APE Series Pressure Gauges

45APE/45APEF Series Accuracy Outside Switch Points (accuracy above or below trip point)	
PSI Range	Accuracy
< 100	10
100-300	4
400-1500	2
2000	12
3000-5000	8

Reading based on testing performed with switch point at mid scale which represents worst case

- Pressure Relief Disc: Back of case (except EX models)
- Switch Reset Deadband: Approximately 10% FS
- Switch Point Accuracy: $\pm 1.5\%$
- Snap-Acting Switches: 2-SPDT; 2 A @ 250 VAC
- Wire Connections (Surface Mount): 1/2 NPTF conduit entry with terminal block
- Wire Connections (Panel Mount): Wire leads, 18 AWG (1.0 mm²) x 9 in (229 mm) long
- Weight: 5 lbs 6 oz (2.4 kg) approximately
- Explosion-proof models: 21 lb. (9.5 kg) approximately
- Dimensions: 10 x 9 x 6 in. (254 x 229 x 152 mm) approximately
- Explosion-proof models: 12 x 12 x 9 in (305 x 305 x 229 mm) approximately
- CSA Certified Models:
 - 45APE Series models with pressure range thru 5000 psig (34.4 MPa) [344 bar] are CSA approved for non-hazardous locations
 - Explosion-proof EX models with pressure range thru 5000 psig (34.4 MPa) [344 bar] are CSA approved for Hazardous locations Class I, Groups C & D



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Pressure Gage

45APE Series

The 45APE Series gage instrument is a mechanical gage for pressure indication. It includes two adjustable SPDT switches. These snap-acting switches can be used for start and stop, to trip alarms and to shut down equipment. Ranges are available from 30 psi (207 kPa) [2.06 bar] thru 5,000 psi (34.48 Mpa) [344.73 bar].

The 45APE Series utilizes a bourdon tube sensing unit with a stainless steel dual-sector geared movement. Each of the sectors drives separate pointers when pressure is applied to the bourdon tube. The indicating pointer (visible pointer) shows actual pressure reading, including below and beyond the low and high trip points. The low and high trip points are adjustable independently on the gage front lens. The switch operator pointer (behind the dial) is calibrated to follow the indicating pointer. The low and high trip point indicators arrest the switch operator pointer. As pressure decreases or increases through the principal of lost motion, the respective snap-switch is tripped.

The 45APE Series models are widely used in applications requiring pressure indication and Form C low and high pressure switches.

Basic Models

45APE Series gage instrument - Surface mount
(square case) version

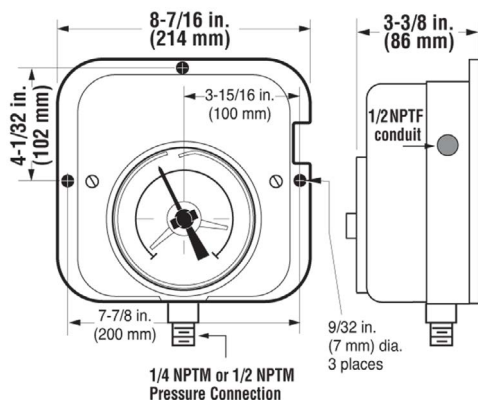
45APEF Series gage instrument - Panel mount
(round case) version



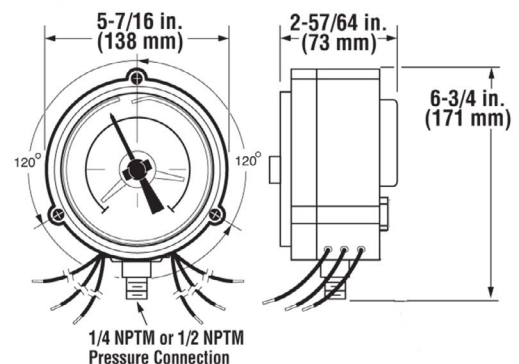
Certain models listed for non-hazardous locations. Pending for hazardous location.

Dimensions

Surface Mount Models



Panel Mount Models



Specifications

Dial: White on black, dual scale, psi and kPa standard, 4-1/2 in. (114 mm) diameter

Case: Die cast aluminum, surface or panel mount

Overrange: Do not exceed 10% FS above full range

Process Connection:

1/4 NPTM thru 1000 psi; 1/2 NPTM 1500 - 5,000 psi

Sensing Element: Bronze or 316 stainless steel bourdon tube

Gage Accuracy: Indicating pointer within switch points with hysteresis of <1%: $\pm 2\%$ for first and last quarters of scale; middle half of scale is $\pm 1\%$. Indicating pointer above or below trip point:

Range	Accuracy (+/-) above or below trip point only
< 100	10
100-300	4
400-1500	2
2000	12
3000-5000	8

Reading based on testing performed with switch point at mid scale which represents worst case.

Switch Point Accuracy: $\pm 1.5\%$.

Switch Reset Deadband: Approximately 10% FS

Pressure Relief Disc: Back of case (except EX models)

Snap-Acting Switches: 2-SPDT; 2 A @ 250 VAC

Wire Connections (Surface Mount):

1/2 NPTF conduit entry with terminal block

Wire Connections (Panel Mount):

Wire leads, 18 AWG (1.0 mm²) x 9 in. (229 mm) long

Weight: 5 lbs 6 oz (2.4 kg) approximately

Explosion-proof models: 21 lb. (9.5 kg) approximately

Dimensions: 10 x 9 x 6 in. (254 x 229 x 152 mm) approximately

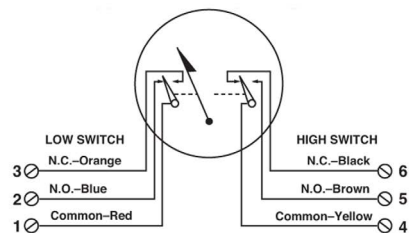
Explosion-proof models: 12 x 12 x 9 in (305 x 305 x 229 mm) approximately

CSA Certified Models:

45APE Series models with pressure range thru 5000 psig (34.4 MPa) [344 bar] are CSA approved for non-hazardous locations.

Explosion-proof EX models with pressure range thru 5000 psig (34.4 MPa) [344 bar] are CSA approved for Hazardous locations Class I, Groups C & D.

Typical Wiring Diagram



Contact Ratings: 2-SPDT snap-switches; 2 A @ 250 VAC

NOTE: Diagram shows the pointer in the at rest (shelf) position.

How to Order

Options listed below. All configurations may not be available. Call your sales representative or FW Murphy for more information.

45APE	-	S	-	100	-	EX
Base Model		Bourdon Tube and Socket				Options
45APE 45APEF		A = Bronze / Brass std. <=1000 psi S = 316 Stainless Steel / 316 Stainless Steel				Verify Option Availability, Not All Options Can Be Provided For Every Model. EX = Explosion-Proof; Approved for Hazardous Areas Class I, Groups C and D to <=5000 psig EL = (EXLC) Explosion-Proof Less Case
Ranges						
Specify Vacuum/psi						
30V100 = 30" vac-100 psi						
60 = 0-60 psi						
100 = 0-100 psi						
200 = 0-200 psi						
300 = 0-300 psi						
400 = 0-400 psi						
600 = 0-600 psi						
1000 = 0-1000 psi						
1500 = 0-1500 psi						
2000 = 0-2000 psi						
3000 = 0-3000 psi						
5000 = 0-5000 psi						

Approximate Shipping Weight and Dimensions		
Model	Weight	Dimension
45APE	5 lbs 6 oz (2.4 kg)	10 x 9 x 6 in. (254 x 229 x 152 mm)
45APEF	5 lbs 6 oz (2.4 kg)	10 x 9 x 6 in. (254 x 229 x 152 mm)
Explosion Proof	21 lb. (9.5 kg)	12 x 12 x 9 in (305 x 305 x 229 mm)